

CLAIMS

What Is Claimed Is:

1. An optical scanning apparatus for optically scanning a surface to be scanned at a constant velocity, the optical scanning apparatus comprising:

a light source for emitting a light flux;

a first optical lens system for coupling the light flux emitted by the light source to a following optical lens system;

a second optical lens system for forming the light flux from the first optical lens system into a line image extending in a direction corresponding to a main scanning direction of the surface to be scanned which is perpendicular to a sub scanning direction;

an optical deflector for deflecting the light flux formed as the line image via a deflecting reflective plane thereof, which is located near where the line image is formed; and

a third optical lens system for condensing the deflected light flux as an optical beam spot on the surface to be scanned; wherein

the second optical lens system includes a glass lens and at least one plastic lens having a non-arc shape,

new wherein the at least one plastic lens has a negative power
in the sub scanning direction.

2. A method of manufacturing an optical scanning apparatus, the method comprising the steps of:

providing a light source for emitting a light flux;

arranging a first optical lens system so as to couple the light flux emitted by the light source to a following optical lens system;

forming a second optical lens system to include a glass lens and at least one plastic lens having a non-arc shape and negative power in a sub scanning direction;

arranging the second optical lens system following the first optical lens system such that the second optical lens system forms the light flux from the first optical lens system into a line image extending in a direction corresponding to a main scanning direction of the surface to be scanned which is perpendicular to the sub scanning direction;

arranging an optical deflector so as to deflect the light flux formed as the line image via a deflecting reflective plane thereof, which is located near where the line image is formed; and

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arranging a third optical lens system so as to
condense the deflected light flux as an optical beam spot
on the surface to be scanned.

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3. An optical scanning apparatus for optically
scanning a surface to be scanned at a constant velocity,
the optical scanning apparatus comprising:

means for emitting a light flux;

means for coupling the light flux emitted by said
means for emitting a light flux to a means for forming the
light flux into a line image;

means for forming the light flux received from the
means for coupling the light flux into a line image
extending in a direction corresponding to a main scanning
direction of the surface to be scanned which is
perpendicular to a sub scanning direction;

means for deflecting the light flux formed as the line
image via a deflecting reflective plane thereof, which is
located near where the line image is formed; and

means for condensing the deflected light flux as an
optical beam spot on the surface to be scanned; wherein

the means for forming the light flux into the line
image includes a glass lens and at least one plastic lens

new
having a non-arc shape and negative power in the sub
scanning direction.

4. An image forming apparatus for forming an image by optically scanning a surface to be scanned at a constant velocity, the image forming apparatus comprising:

means for emitting a light flux;

means for coupling the light flux emitted by said
means for emitting a light flux to a means for forming the
light flux into a line image;

means for forming the light flux received from the
means for coupling the light flux into a line image
extending in a direction corresponding to a main scanning
direction of the surface to be scanned which is
perpendicular to a sub scanning direction;

means for deflecting the light flux formed as the line
image via a deflecting reflective plane thereof, which is
located near where the line image is formed; and
means for condensing the deflected light flux as an optical
beam spot on the surface to be scanned; wherein

the means for forming the light flux into the line
image includes a glass lens and at least one plastic lens
having a non-arc shape and negative power in the sub
scanning direction.